

REMARKS

Applicant request further consideration and examination in view of the following remarks. Claims 1-6 have been withdrawn from consideration. Claims 7 and 20 have been amended. Claims 7-24 are pending.

Rejection under 35 U.S.C. § 103 (Mahmoud in view of Ong and Babor)

Claims 7-24 are rejected under 35 U.S.C. § 103(a) as being unpatentable over United States Patent Number 4,938,945 to Mahmoud et al. (hereinafter “Mahmoud”) in view of United States Patent Number 5,698,483 to Ong et al. (hereinafter “Ong”) and “Basic College Chemistry”, Second Edition, 1953, pp. 255-260 by Babor (hereinafter “Babor”).

To establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art cited must teach or suggest all the claim limitations. *see* M.P.E.P. § 2143. Without admitting that any of the criteria are satisfied, the Applicant respectfully asserts that the Examiner’s rejection fails to satisfy one or more criteria.

Lack of all limitations:

Claim 7 requires blending the ferric trichloride/solvent solution with a polymer to create a mixture, and adding the mixture to anhydrous hydrofluoric acid thereby converting the ferric trichloride to ferric trifluoride. Claim 20 requires combining the salt solution with polyethylene glycol powder to form a mixture, and adding the mixture to anhydrous hydrofluoric acid, thereby allowing the ferric trichloride to react with the anhydrous hydrofluoric acid and to convert to ferric trifluoride. None of Mahmoud, Ong, or Babor, nor the combination thereof describes at least these features.

Mahmoud describes a reaction of ferric trichloride with hydrofluoric acid to produce ferric trifluoride. As described by claim 7, liquid anhydrous HF is introduced into a reaction vessel containing anhydrous FeCl₃ to react. Mahmoud does not describe any other substances in the reaction vessel with the HF or FeCl₃ other than the reactants and reaction

products, much less solvents or polymers as required by claim 7 or the water of the salt solution or the polyethylene glycol required by claim 20.

Ong describes forming nano-sized powders of ceramic materials by suspending dissolved metal cation salts in a gel and then subjecting the mixture to heat to remove organic material and water thereby leaving nano-sized particles. Ong does not describe reacting the metal cation salts with any other substance while the metal cation salt is dissolved the gel.

Babor is only relied upon as teaching small particle size for promoting reactions.

As none of Mahmoud, Ong, or Babor, nor the combination describe the limitations of the method of claims 7 requiring blending the ferric trichloride/solvent solution with a polymer to create a mixture, and adding the mixture to anhydrous hydrofluoric acid thereby converting the ferric trichloride to ferric trifluoride, nor the limitations of claim 20 requiring combining the salt solution with polyethylene glycol powder to form a mixture, and adding the mixture to anhydrous hydrofluoric acid, thereby allowing the ferric trichloride to react with the anhydrous hydrofluoric acid and to convert to ferric trifluoride, the combination put forth by the Examiner does not describe each and every limitation of claims 7 or 20 as required under § 103.

Lack of Motivation

The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. M.P.E.P. § 2143.01 (citing *In re Mills*, 916 F.2d 680, (Fed. Cir. 1990)).

The Examiner states that it would be obvious to use the process of Ong in combination with the process of Mahmoud to produce nano-sized particles of ferric chloride which would have a high surface area to promote the reaction rate. Applicant would first note that the Examiner recites nano-sized particles of ferric chloride in his motivation. Ferric chloride is a reactant in claimed invention not the product of the claimed invention which is the substance that will be produced in nano-sized particles. If the Examiner is using the process of Ong in combination with Mahmoud to first product nano-sized particles of ferric

chloride, then the stated motivation of the Examiner is in clear conflict with the limitations of claims 7 and 20.

Even if the Examiner's recitation of ferric chloride is in error, there is no motivation to combine Mahmoud and Ong. Mahmoud's disclosure of reaction of ferric chloride with hydrofluoric acid does not recite that the reaction should be done in the presence of any other materials, much less the solvents or polymers of claim 7 or the water or polyethylene glycol of claim 20. In fact, as noted by the Examiner, Mahmoud discloses that the reaction should be conducted in the absence of water. The Examiner's reasoning regarding the suspension of the water in the Ong has no basis in Mahmoud or Ong and only occurs through the use of the present application as hindsight. Further, Ong never discloses reacting the metal cation salts while they are suspended and does not even suggest that such a reaction may be possible, much less suggest the desirability of performing such a reaction as required by the Examiner's motivation.

Further the Examiner's motivation requires substantially changing the principle of operation of both Mahmoud and Ong. Mahmoud describes the reaction in the absence of other materials, and Ong does not disclose reacting the materials in its invention at all. To make the combination suggested by the Examiner would require a substantial modification of both Mahmoud and Ong. If the proposed modification or combination of the prior art would change the principle of operation of the prior art invention, then the teachings of the references are not sufficient to render the claims *prima facie* obvious. *In re Ratti*, 270 F.2d 810, 123 USPQ 249 (CCPA 1959).

As none of Mahmoud, Ong or Babor suggest the modifications proposed by the Examiner and the proposed combination would substantially change the principle of operation of both Mahmoud and Ong, the combination proposed by the Examiner is improper and should be withdrawn.

Dependent claims:

Claims 8-19 and 21-24 depend directly from claims 7 and 20 respectfully, and therefore inherit all the limitations thereof. Claims 8-19 and 21-24 are, therefore, allowable for at least the reasons set forth with respect to claims 7 and 20.

Conclusion

In view of the above, each of the presently pending claims in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to pass this application to issue.

Applicant believes no fee is due with this response. However, if a fee is due, please charge Deposit Account No. 06-2380, under Order No. 50715/P005US/10311739 from which the undersigned is authorized to draw.

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Respectfully submitted,

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